

# Anybus-IC

Anybus-IC is a family of small interchangeable communication modules that combines high performance with low cost, all within a size of only 9 cm<sup>2</sup>. Anybus-IC is a perfect fit for industrial field devices where there is limited space available for the communication interface.

Anybus-IC can be used with various standard network connectors. In addition, using M12 connectors for IP65/67 rating makes Anybus-IC an ideal solution for harsh industrial environments.



### Used with automation devices such as:

- Sensors
- Valve manifolds
- Weigh scales
- LED signs
- Bar-code scanners
- Welding machines
- I/O blocks
- RFID applications

### Availability

#### Network:

CANopen  
DeviceNet  
EtherCAT\*  
EtherNet/IP  
Modbus TCP  
Profibus  
Profinet

\*(Under development)

### Original technology

You can rely fully on Anybus-IC to handle the communication for your industrial devices since it contains original industrial network technology from the network founders and HMS.



Anybus NP30 network processor

### Anybus-IC - a small and powerful network solution

There is one separate Anybus-IC available for each network. Each module contains all the digital/analog hardware and software needed to communicate with the selected network. The standardized mechanical, electrical and software interfaces make the different Anybus-IC's fully interchangeable.

Anybus-IC is a proven solution that has been tested and approved for fieldbus/ industrial Ethernet conformity. Thanks to its high level of integration, the Anybus-IC modules consume very little power. All modules include a galvanically isolated network interface and only require one 5 Volt power supply.

### Flexible application interface

Anybus-IC has several flexible application interfaces that enable the modules to operate either stand-alone or controlled by a microcontroller. The interfaces operate completely independent of each other and can be used simultaneously.

### Features and benefits

- Very small size - ideal for small to medium-sized industrial devices
- Contains all analog and digital components for full network connectivity
- Operates as a stand-alone device (I/O) or together with another microcontroller
- Serial Communication Interface (SCI) using a protocol based on Modbus-RTU
- Synchronous Serial Channel (SSC) for process data communication using shift register chain
- Powered by the Anybus NP30 network processor
- Configuration and monitoring via a PC configuration port
- Very low power consumption with wide temperature coverage
- IT functions in Anybus-IC Ethernet versions: Embedded webserver, Email client and FTP server
- Ethernet TCP/UDP/IP socket interface allowing customer specific TCP/IP protocols
- Pre-tested and verified for fieldbus/industrial Ethernet conformance

### Generic software interface

The software interface to the Anybus-IC is the same regardless of module chosen, i.e. the same software driver can be used to interface the different modules from the host application.

The host communication is based on the proven and easy-to-implement Modbus RTU protocol.

### Wide temperature range

Anybus-IC operates in temperatures from -40° to +85° Celsius and can be used with all types of products including extreme applications such as LED road signs where a change in temperature is important factor.

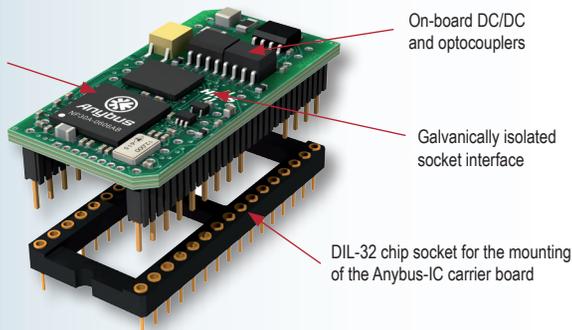


## TECHNICAL SPECIFICATIONS

Technical Details	
Dimensions (L • W • H)	42•21•15 mm 1.65•0.83•0.59"
RoHS Compliance	Yes
Galvanically isolated network interface	Yes
Module connector	DIL-32
Application interface	MIF (Monitor interface) 4.8 kbps-57.6 kbps SCI (Profibus, DeviceNet and CANopen) 4.8 kbps-625 kbps SCI (Ethernet versions) 4.8 kbps-57.6 kbps SSC Discrete shift registers
Ethernet versions (IT functions)	Transparent socket interface FTP server E-mail Web server with SSI support
Network status LED outputs	Accessible via the shift register interface (SSC) and via SCI interface
Network node address and baud rate input	Accessible via the shift register interface (SSC) and via SCI interface
Certifications	
UL, c-UL	File number: E214107
Pre-tested and verified for fieldbus and Ethernet conformance	Yes
CE - Declaration of Pre-Conformity	
Emission EN 61000-6-4	EN55016-2-3 Radiated emission
Immunity EN 61000-6-2	EN61000-4-2 Electrostatic discharge EN61000-4-3 Radiated immunity EN61000-4-4 Fast transients/burst immunity EN61000-4-5 Surge immunity EN61000-4-6 Conducted immunity
Electrical Characteristics	
Power	5 VDC, +/- 5 %
Current consumption	DeviceNet 80 mA Profibus 150 mA CANopen 150 mA Ethernet versions 250 mA
Environmental Characteristics	
Operating temperature	-40 to +85 °C -40 to +185 °F
Storage temperature	-40 to +85 °C -40 to +185 °F
Humidity	5-95 % non-condensing
Starter kit	
Carrier board and resource CD	

## PHYSICAL OVERVIEW

Anybus NP30 network processor



Example - Anybus-IC DeviceNet

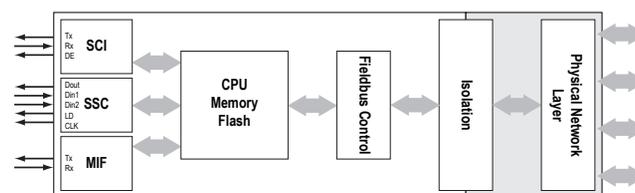
## NETWORK SPECIFIC FEATURES

1 = Total I/O, 2 = SCI I/O, 3 = SSC I/O, 4 = Baud rate, 5 = Other

<b>CANopen</b>	1 = 144 byte IN/OUT 2 = 128 byte IN/OUT 3 = 16 byte IN/OUT 4 = Up to 1 Mbit/s 5 = Up to 24 PDOs in each direction, LSS, Auto baud rate support
<b>DeviceNet</b>	1 = 144 byte IN/OUT 2 = 128 byte IN/OUT 3 = 16 byte IN/OUT 4 = 125-500 kbit/s 5 = Auto baud rate support, UCCM Capable, Quick Connect
<b>EtherCAT</b>	1 = 144 byte IN/OUT 2 = 128 byte IN/OUT 3 = 16 byte IN/OUT 4 = 100 Mbit/s full duplex 5 = PDO and SDO support, No IT function support. UNDER DEVELOPMENT
<b>EtherNet/IP</b>	1 = 144 byte IN/OUT 2 = 128 byte IN/OUT 3 = 16 byte IN/OUT 4 = 10/100 Mbit/s full/half duplex 5 = IT functions
<b>Modbus TCP</b>	1 = 144 byte IN/OUT 2 = 128 byte IN/OUT 3 = 16 byte IN/OUT 4 = 10/100 Mbit/s full/half duplex 5 = IT functions
<b>Profibus</b>	1 = 144 byte IN/OUT 2 = 128 byte IN/OUT 3 = 16 byte IN/OUT 4 = Up to 12 Mbit/s 5 = Extended diagnostic support, Set Slave Address support
<b>Profinet</b>	1 = 144 byte IN/OUT 2 = 128 byte IN/OUT 3 = 16 byte IN/OUT 4 = 100 Mbit/s full duplex 5 = Conformance class A, IT functions

## INTERNAL OVERVIEW

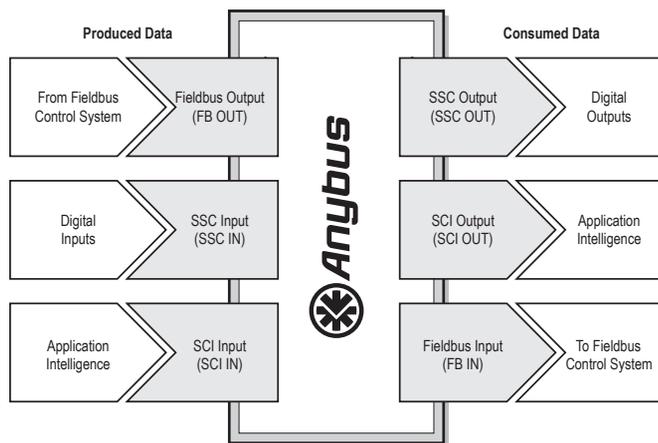
The figure below illustrates the basic properties of the Anybus-IC, on-board I/O, fieldbus interface.



## DATA MAPPING

The module features a flexible data mapping scheme; data received on one communication channel can be mapped (i.e. copied) to another, and vice versa.

This allows for not just network connectivity, but also for internal I/O in the application, by mapping SSC I/O to the SCI channel. By mapping fieldbus/Ethernet I/O to the SSC channel, SSC I/O can be accessed directly from the network.



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